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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/027,668	12/21/2001	Daniel T. Colbert	11321-P011CD10	1675

7590 05/28/2004
Hugh R. Kress
2400 Bank One Center
910 Travis Street
Houston, TX 77002

EXAMINER

TURNER, ARCHENE A

ART UNIT PAPER NUMBER

1775

DATE MAILED: 05/28/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.	Applicant(s)	
10/027,668	COLBERT ET AL.	
Examiner	Art Unit	
Archene Turner	1775	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 March 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 84-93 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 84-93 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
 Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
 Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

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1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

2. Claims 89-93 rejected under 35 U.S.C. 102(e) as being anticipated by Crespi et al (6,538,262).

The rejection is maintained for reason of record in paper sent 11-20-03.

Applicant's arguments filed 3-18-04 have been fully considered but they are not persuasive. The applicant argues that the reference does not disclose how to make the claimed product. This is not found persuasive; since the reference clearly directs the reader to the article by Weng-Sieh et al, which discloses the claimed segments of carbon and boron nitride, and thus the rejection stands.

3. Claims 87,89-93 rejected under 35 U.S.C. 102(e) as being anticipated by Smalley (5,591,312) .

Smalley discloses that the claimed carbon nanotubes may include B and N (column 11, line 55-60). It is the examiner's position that this includes the claimed segments of boron nitride and carbon within the claimed nanotubes.

4. Claims 84,87-93 rejected under 35 U.S.C. 102(b) as being anticipated by Stephan et al "Doping Graphite and Carbon Nanotubes Structures with Boron and Nitrogen".

Stephan et al discloses the claimed boron nitride coated fibers and the claimed nanotubes containing h-BN, wherein the BN may be a layer or included in the carbon nanotube.

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 84-85,88 rejected under 35 U.S.C. 103(a) as being unpatentable over Boulanger et al "Concentric shelled and plate-like graphitic boron nitride nanoparticles produced by CO₂ laser pyrolysis" or Gleize et al "Growth of tubular boron nitride filaments"

Boulanger et al discloses the use of boron dichloride to produce the claimed boron nitride layer on a nanoparticle or Gleize et al uses the claimed diborane to produce the claimed boron nitride coating on a particle instead of a single walled nanotubes. It is the examiner's position that one of ordinary skill in the art would know that this technology translates to coating single walled nanotubes instead of the disclosed particles.

7. Claims 84, 88 are rejected under 35 U.S.C. 103(a) as being unpatentable over Loiseau et al "Boron Nitride Nanotubes with reduced numbers of layers synthesized by Arc Discharge".

Loiseau et al discloses a boron nitride nanotubes that maybe one or two layered, with both the layers being BN. One of ordinary skill in the art would know that the single walled nanotubes maybe be substituted by a carbon single walled nanotubes, since the properties of BN and carbon nanotubes are similar.

8. Claims 84-88 rejected under 35 U.S.C. 103(a) as being unpatentable over Gabor et al (5,364,660) or Hirano et al (4,762,729) or Rice et al (4,642,271).

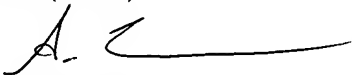
Gabor et al or Hirano et al or Rice discloses the claimed method of coating BN on a carbon substrate but they fail to disclose the claimed carbon nanotubes. It would have been obvious to one of ordinary skill in the art to substitute a carbon nanotubes for the clime carbon substrate, as these nanotubes are known in the art to provide improved properties to the disclosed fibers.

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9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Archene Turner whose new telephone number is (571) 272-1545. The examiner can normally be reached on Monday through Wednesday, and Friday from 10:30 am. to 6:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Deborah Jones can be reached on (571) 272-1535. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306. Please remember to include on the fax, the art unit 1775, serial number and Examiner's name.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



A. A. Turner
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Group 1700

aat